General Safety Information

⚠ WARNING

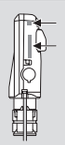
- **When the shifting switch is operated, the motor which drives the front derailleur will operate without stopping at the shifting lever position. Always be sure to remove the battery before carrying out installation and adjustment, otherwise your fingers may become stuck.**
- **Obtain and read the service instructions carefully prior to installing the parts.** Loose, worn or damaged parts may cause the bicycle to fall over and serious injury may occur as a result. We strongly recommend only using genuine Shimano replacement parts.
- **Obtain and read the service instructions carefully prior to installing the parts.** If adjustments are not carried out correctly, the chain may come off and this may cause you to fall off the bicycle which could result in serious injury.
- Use the ST-7971/7970 with the BR-7900. Do not use the BR-7900 in combination with previous STI levers for road riding or with the BL-R770/ BL-R550 brake levers for flat handlebars, otherwise the braking performance provided will be much too strong.
- Because of the characteristics of the carbon fiber material, you must never modify the levers, otherwise the lever may break and the brakes may no longer work as a result.
- Before riding the bicycle, check that there is no damage such as carbon fiber peeling or cracking. If there is any damage, replace with a new part immediately without trying to repair the damage, otherwise the lever may break and the brakes may no longer work as a result.
- Read these Technical Service Instructions carefully, and keep them in a safe place for later reference.

<Points to note about the handlebars>
- Handle inner diameter: 19.0 - 22.5 mm
- Handle outer diameter: 22.2 - 24.0 mm
- Applicable handlebars: Carbon fiber handlebars (with aluminum inserts where the brake levers are installed) or aluminum handlebars
  * Carbon fiber handlebars without aluminum inserts where the brake levers are installed cannot be used.

Note

- **RD-7970: Be sure to adjust the top adjustment bolt and the low adjustment bolt by following the procedures in the Service Instructions. If these bolts are not adjusted, the chain may become clamped between the spokes and the large sprocket and the wheel may lock, or the chain may slip onto the small sprocket.**
- Use a soft cloth to clean the carbon fiber levers, and be sure to moisten the cloth with neutral detergent before using it, otherwise the lever material may become damaged and lose its strength.
- Avoid leaving the carbon fiber levers in places where high temperatures are present. Also keep them well away from fire.
- Operation of the levers related to gear shifting should be made only when the front chainwheel is turning.
- Always be sure to use the TL-EW01 special tool to remove the cable.
- Be careful not to let water get into the terminal.
- Do not disassemble, otherwise problems may occur.
- When routing the electric cable, make sure that it does not interfere with the operation of the brake lever.
- Parts are not guaranteed against natural wear or deterioration resulting from normal use.
- For maximum performance we highly recommend Shimano lubricants and maintenance products.
- For any questions regarding methods of installation, adjustment, maintenance or operation, please contact a professional bicycle dealer.

There may be times when we need to send out important information regarding our products, so we recommend that you register your product by entering the product serial number on our website.
http://www.shimano.com



Technical Service Instructions CE SI-7DL0A-002

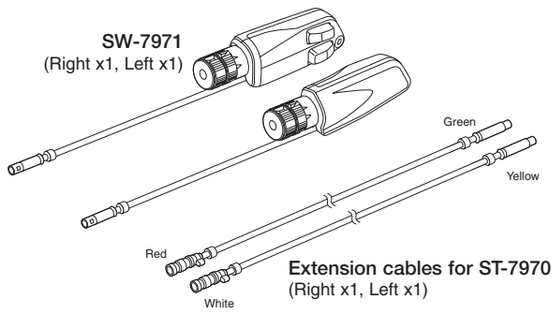
SW-7971

Shifting switch for aero bar
(for time trial / triathlon)

In order to realize the best performance, we recommend that the following combination be used.

Series	DURA-ACE	
Shifting switch for aero bar	SW-7971	
Dual control lever	ST-7971	ST-7970
Electric cable	SM-EW79A-I	SM-EW79A-E
Battery / Battery charger	SM-BTR1 / SM-BCR1	
Gears	20	
Front derailleur	FD-7970	
Front chainwheel	FC-7900	
Rear derailleur	RD-7970	
Freehub	FH-7900	
Cassette sprocket	CS-7900 (Except for 11-28T)	
Chain	CN-7900	
Caliper brake	BR-7900	

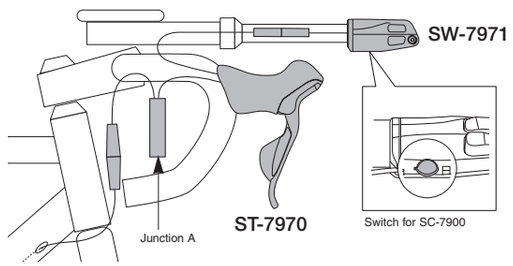
■ Components



Accessories
- Heat shrinking tubes x 2

■ Routing Map

Names and locations of each part



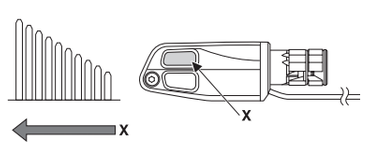
- When routing the electric cable to junction (A), allow enough looseness in the cable so that the ST-7970 / SW-7971 installation position can be adjusted and so that the handlebars can be turned fully to the left and right. When routing the electric cable to junction (A), the cable can be laid underneath the handlebar tape when it is wound onto the handlebars.
- Refer ST-7971/7970 service instructions for button indicator operations.

Gear shifting operation

■ Rear shifting switch operation

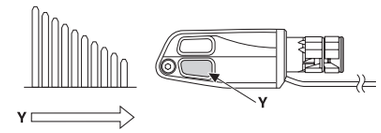
< Shifting switch (X) >

The chain moves from a small sprocket to a larger sprocket each time the switch is operated.



< Shifting switch (Y) >

The chain moves from a large sprocket to a smaller sprocket each time the switch is operated.



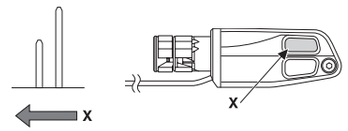
The checker (SM-EC79) can be used to shift up and shift down shifting switches (X) and (Y).

* For details on the shifting switch selection method, refer to the Service Instructions for the checker.

■ Front shifting switch operation

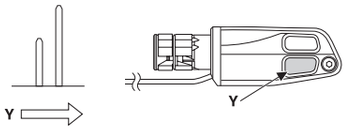
< Shifting switch (X) >

The chain moves from the large chainring to the small chainring.



< Shifting switch (Y) >

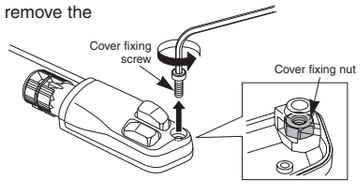
The chain moves from the small chainring to the large chainring.



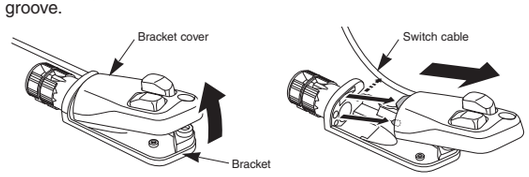
If the chain falls off on the inside, keep pressing shifting switch (Y) to move the front derailleur to the outermost position in order to reset the chain.

Installation to the handlebars

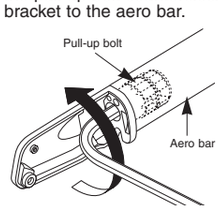
1. Use a 2.5 mm Allen key to remove the cover fixing screw (M4).



2. Remove the bracket cover from the end of the bracket, disengage the two hooking tabs, and then remove the switch cable from the bracket groove.

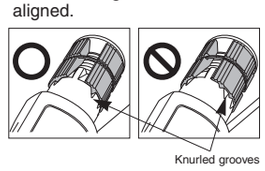


3. Place the bracket onto the end of the aero bar. Adjust the direction of the switch operation surface at this time. Use a 5 mm Allen key to turn the pull-up bolt counterclockwise to tighten it in order to install the bracket to the aero bar.



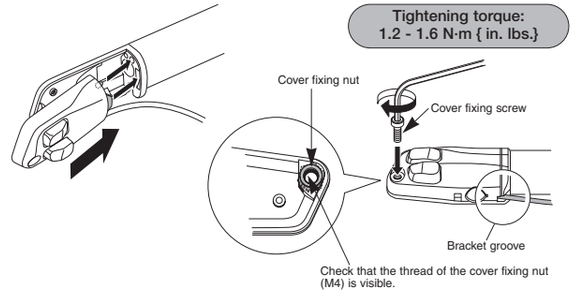
Tightening torque:
5 - 6 N·m { in. lbs.}

Note: The knurled grooves should be aligned.



When installing the components to carbon frame/handle bar surfaces, verify with the manufacturer of the carbon frame/parts for their recommendation on tightening torque in order to prevent over tightening that can cause damage to the carbon material and/or under tightening that can cause lack of fixing strength for the components.

4. Insert the hooking tabs, and then engage the end of the bracket cover to install the bracket. Check that the switch cable is protruding from the bracket groove, and then tighten the cover fixing screw.

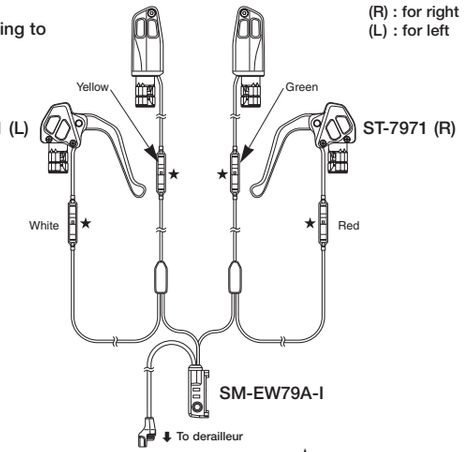

Tightening torque:
1.2 - 1.6 N·m { in. lbs.}
Cover fixing nut
Cover fixing screw
Bracket groove
Check that the thread of the cover fixing nut (M4) is visible.

Refer to the Service Instructions for the electric cable (SM-EW79A-I / EW79A-E) for details on connecting the cable connectors and routing the cable.

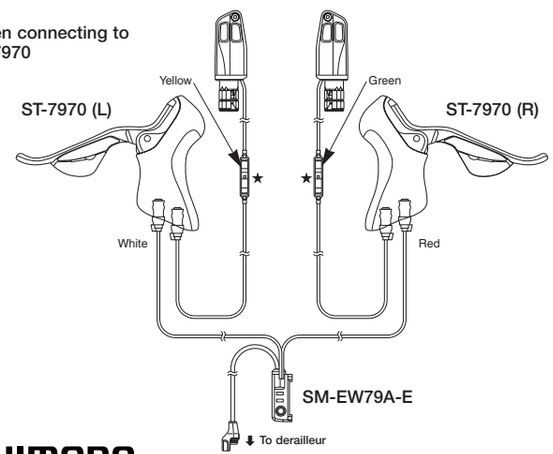
■ Example of cable connections (for reference)

When connecting to ST-7971

(R) : for right
(L) : for left



When connecting to ST-7970



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* Service Instructions in further languages are available at :
http://techdocs.shimano.com

Please note: specifications are subject to change for improvement without notice. (English)
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